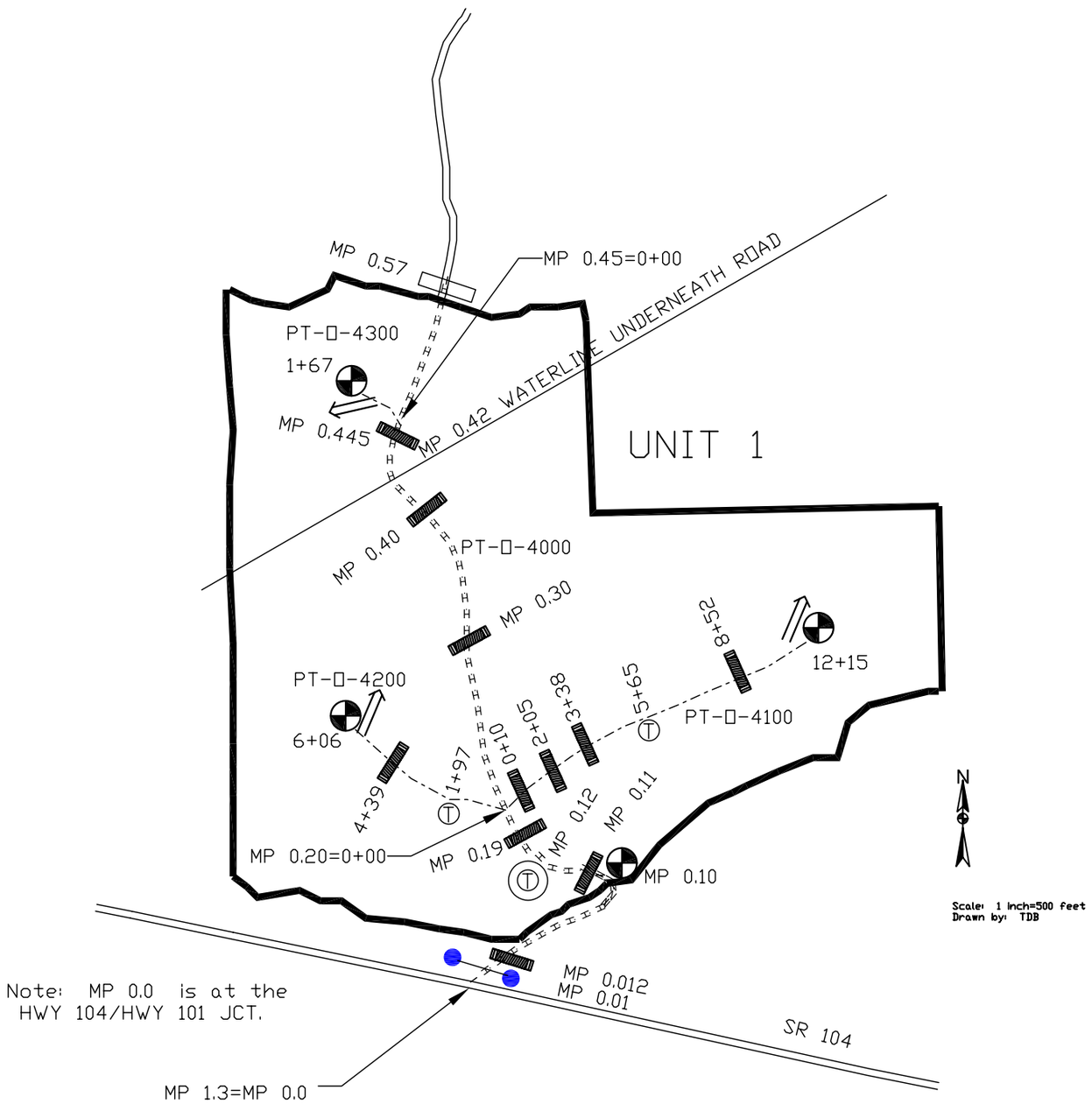
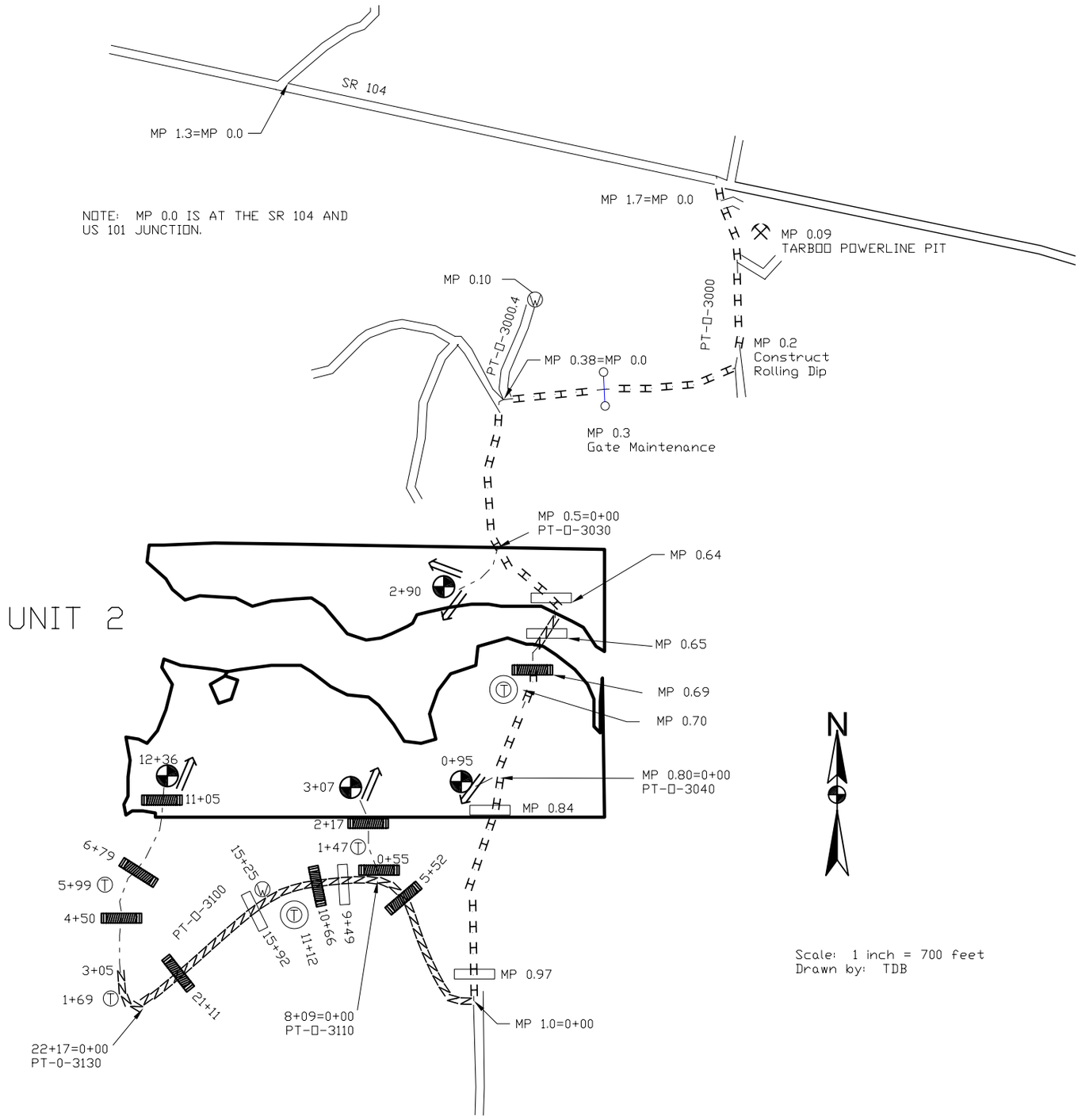
EAST CROCKER TIMBER SALE
ROAD PLAN MAP 1 OF 2
SEPTEMBER 02, 04



- Landing
- Culvert Installation
- Gate Maintenance
- Culvert Maintenance
- Turnout
- Gate Installation
- Ditchout
- Grade and rock turnout

- Unit Boundary
- Existing Road
- Optional Construction
- Required Pre-haul Maintenance
- Required Reconstruction
- Pit

EAST CROCKER TIMBER SALE
ROAD PLAN MAP 2 OF 2
AUGUST 30, 2004



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME: East Crocker

ROAD PLAN DATE: September 8, 2004

SCOPE OF PROJECT

This project includes, but is not limited to new construction including: clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, landing construction, acquisition and installation of drainage structures, and hauling and application of rock.

This project also includes, but is not limited to pre-haul and post-haul maintenance of all roads listed as Purchaser Maintenance under Clause C-50.

> Purchaser maintenance shall consist of reshaping the roadway surface with a grader, cleaning ditches to their original construction configuration, removing all woody debris and slash from ditch lines and ditchouts and repairing or replacing any drainage structures damaged by the Purchaser during the course of the sale.
>
> This work shall be completed prior to the start of timber haul and again at the completion of use.

This project also includes, but is not limited to reconstruction including:

Road	**Length**	**Requirements**
PT-O-4000	MP 0.10	Construct landing
PT-O-3000	MP 0.65	Remove approximately 10 cubic yards of sidecast and replace with 10 cubic yards of light loose rip rap. Key rip rap to existing rip rap on the fill slope. Haul waste to MP 0.10 on the PT-0-3000.4 and waste in the existing borrow pit according to the Contract Administrator.
PT-O-3130	0+00 – 3+05	Import select fill to adjust road grade and realign centerline according to construction stakes and slope stakes.
PT-O-3100	0+00-22+17	Brush according to the Brushing Detail. Reconstruct road prism to the specifications shown on the Typical Section Sheet. Install and improve drainage structures as listed on the Culvert List. Grade and shape running surface. Apply rock as listed on Rock List.
	5+52	Install 18"x26' culvert
	9+49	Rebuild headwall and armor inlet of existing pipe
	10+66	Install 18"x26' culvert
	11+12	Grade, shape, and rock existing right turnout with 3 inch minus surfacing, 15 cy of surfacing
	15+92	Rebuild headwall and armor inlet of existing pipe, rip rap outlet with 1.5 cubic yards rip rap and install flume. Remove approximately 10 cubic yards of sidecast and replace with 10 cubic yards of light loose rip rap. Haul waste to Station 15+25 on the PT-O-3100, place waste adjacent to the existing road and waste according to the Contract Administrator.
	21+11	Install 18"x26' culvert

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME: East Crocker

ROAD PLAN DATE: September 8, 2004

This project also includes, but is not limited to pre-haul maintenance including:

Road	**Length**	**Requirements**
PT-O-4000	MP 0.00	Brush according to the Brushing Detail. Install and improve drainage structures as listed on the Culvert List. Clean ditches, grade and shape running surface. Apply rock as listed on the Rock List.
	MP 0.01	Install gate according to Gate Detail
	MP 0.012	Install 18X36' culvert
	MP 0.11	Install 18"x26' culvert
	MP 0.12	Grade and rock turnout (10 cy). Brush according to the Brushing Detail.
	MP 0.19	Install 18"x26' culvert
	MP 0.30	Install 18"x26' culvert
	MP 0.40	Install 18"x26' culvert
	MP 0.42	Caution: waterline crosses the road
	MP 0.445	Install 18"x26'x3 culvert
	MP 0.55 – MP 0.57	Clean ditch
	MP 0.57	Clean inlet and amour inlet of existing culvert
PT-O-3000	MP 0.01 – MP 1.00	Grade and shape running surface.
	MP 0.01 – MP 0.31	Apply rock as listed on the Rock List. Improve drainage structures as listed on the Culvert List.
	MP 0.20	Rebuild dip at road junction
	MP 0.25 – MP 0.40	Clean ditches
	MP 0.30 – MP 1.00	Brush according to the Brushing Detail.
	MP 0.30	Gate maintenance according to the Gate Maintenance Detail.
	MP 0.31 – MP 0.63	Spot patch with 5 cy/station of 3 inch minus surfacing
	MP 0.63 – MP 0.83	Apply rock as listed on the Rock List.
	MP 0.64	Clean inlet and outlet of existing culvert.
	MP 0.69	Install 18"x36' culvert, Construct headwall and rip rap outlet
	MP 0.70	Grade and rock turnout (10 cy)
	MP 0.84	Clean inlet and outlet of existing culvert.
	MP 0.97	Clean inlet and outlet of existing culvert.

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME: East Crocker

ROAD PLAN DATE: September 8, 2004

SECTION 1 - GENERAL CLAUSES

1.1-1

Clauses in this plan apply to all construction or reconstruction or pre-haul maintenance including landings unless otherwise noted.

1.1-2

Construction or reconstruction or pre-haul maintenance of the following road/s is required. All road/s shall be constructed on the State's location and in accordance with the Road Plan.

Road	Length	Type
PT-O-4000	0.56 miles	Pre-haul maintenance
PT-O-4000	0.01 miles	Reconstruction (landing)
PT-O-3000	1.00 miles	Pre-haul maintenance
PT-O-3000	0.01 miles	Reconstruction

1.1-3

Construction or reconstruction or pre-haul maintenance of the following road/s is not required. **If the Purchaser elects to use any of these roads, they shall be constructed or reconstructed on the State's location and in accordance with this Road Plan.**

Road	Length	Type
PT-O-4100	12.15 Stations	Construction
PT-O-4200	6.06 Stations	Construction
PT-O-4300	1.67 Stations	Construction
PT-O-3030	2.90 Stations	Construction
PT-O-3040	0.95 Stations	Construction
PT-O-3100	22.17 Stations	Reconstruction
PT-O-3110	3.07 Stations	Construction
PT-O-3130	3.05 Stations	Reconstruction
PT-O-3130	9.31 Stations	Construction

1.1-4

Any departure from this Road Plan including relocation, extension, change in design or additional roads shall be submitted, in writing, to the Contract Administrator for consideration. Submitted plans must be approved before construction begins.

1.1-5

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to, solid subsurface rock, subsurface springs or saturated ground, and unstable soil.

1.2-1

Construction and/or reconstruction shall not be permitted from November 1 to April 30 unless authority to do so is granted, in writing, by the Contract Administrator.

1.2.1-1

Pioneering shall not extend beyond construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Culvert placement in live streams shall precede embankment where culverts are to be placed along natural ground. Temporary diversion culverts shall be provided when designed culverts are elevated above natural ground within embankments.

Culverts shall be installed in completed subgrade as construction progresses.

Subgrade, ditches and culvert installation shall be completed and are subject to written approval by the Contract Administrator prior to rock application.

1.2-2

Purchaser shall not use roads constructed or reconstructed or pre-haul maintained under this Road Plan for hauling, other than timber cut on the right of way, without written approval from the Contract Administrator.

1.2-3

All roads shall be constructed using track mounted hydraulic excavators unless otherwise authorized, in writing, by the Contract Administrator.

1.3-1

Rock hauling shall not be permitted from November 1 to April 30 unless authorized, in writing, by the Contract Administrator.

1.3-2

Snowplowing shall not be permitted unless authorized, in writing, by the Contract Administrator.

1.3-3

Gate installations required as part of this contract shall be installed within 30 days of the commencement of road construction operations.

SECTION 2 - CLEARING

2.1-1

Fell all vegetative material larger than 6 inches dbh or over 20 feet high between the marked right-of-way boundaries and within waste areas or if not marked in the field, between clearing limits specified on Typical Section Sheet.

2.1-3

Right-of-way timber shall not be decked within the grubbing limits or in locations that interfere with the construction of the road prism, as defined by the Contract Administrator. Right-of-way timber shall not be decked in locations that impede drainage.

2.1-4

The following roads shall be brushed by hand, mechanical brusher, or other method approved by the Contract Administrator. All vegetative material greater than 1 inch in diameter shall be cut that is within 5 feet of the edges of the running surface. Cut material shall not be left on cut slopes, ditchlines, or running surfaces.

ROAD	STATIONS
PT-O-4000	MP 0.00 – MP 0.57
PT-O-3000	MP 0.30 – MP 1.00
PT-O-3100	0+00 – 22+17

SECTION 3 - GRUBBING

3-1

All stumps shall be removed that fall between grubbing limits shown on the Typical Section Sheet. Those with undercut roots shall be removed.

3-2

Grubbing limits are defined as the entire area between external limits shown on the Typical Section Sheet.

SECTION 4 - DEBRIS DISPOSAL AND REMOVAL

4.1-1

Right-of-way debris is defined as all vegetative material larger than one cubic foot in volume, within the clearing limits.

4.1-2

All right-of-way debris disposal shall be completed prior to application of rock.

4.2.3-3

Right-of-way debris shall not be placed against standing timber.

4.2.3-4

Right of way debris shall be scattered outside the grubbing limits.

SECTION 5 - EXCAVATION

5.1-1

Unless controlled by construction stakes or specific design sheets herein, roads shall be constructed in accordance with dimensions shown on the Typical Section Sheet.

5.1-3

The construction of road grade and alignment shall conform to the State's marked location. The reconstruction of existing road grades shall conform to the original location except as directed by the Contract Administrator. Grade and alignment shall have smooth continuity, without abrupt changes in direction.

Construction limitations are as follows:

Favorable Grade	Adverse Grade	Minimum Curve Radius
18%	12%	60 feet

Changes in road grade shall not exceed 7%, except as required in this clause.

Adverse grades on curves shall not exceed 10 percent of the curve radius.

Favorable grades through switchbacks shall not exceed 12%.

Transition grades entering and leaving switchbacks shall not exceed a 5% grade change.

The switchback is defined as, the curved segment of road, between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees.

Transition grades required to meet switchback grade limitations, shall be constructed on the tangents preceding and departing from the switchbacks.

5.1-4

Extra widening on the inside of curves shall be:

2 feet extra	80 -100 foot radius curve
4 feet extra	60 - 80 foot radius curve

5.1-5

Curve widening where required, shall be added to the inside of curves.

5.1-8

Excavation slopes shall be constructed no steeper than shown on the following table (except as construction staked or designed):

Material Type	Excavation Slope Ratio
Common Earth (on side slopes to 55%)	1:1
Common Earth (55% to 70% sideslopes)	¾:1
Common Earth (on slopes over 70%)	½:1
Fractured or loose rock	½:1
Hardpan or solid rock	¼:1

5.1-9

Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

5.1-10

Embankments shall be widened as follows:

Height at Shoulder	Subgrade Widening
Less than 6 feet	2 feet
6 feet or over	4 feet

5.1-11

Embankment slopes shall be constructed no steeper than shown on the following table:

Material Type	Embankment Slope Ratio
Common earth and rounded gravel	1 ½:1
Angular rock	1 ¼:1
Sandy soils	2:1

5.1-12

Organic material shall be excluded from embankment shown on Typical Section Sheet and from waste material deposited on slopes in excess of 40 percent.

5.1-19

Select borrow shall be used at the following locations:

Road	Stations	Source
PT-O-3130	3.05 Stations	Tarboo Powerline Pit

5.1-21

Waste material shall not be deposited within 100 feet of a live stream, wetland, or wetland management zone.

5.1-23

Turnout locations noted on this plan are approximate. Location shall be adjusted to fit final subgrade alignment and sight distances.

5.1-24

Turnouts shall be intervisible with a maximum of 1,000 feet between turnouts unless otherwise specified on the drawings.

5.2-1

Pioneering operations shall not undercut the final cut slope, deposit excavated material outside the right-of-way limits or restrict drainage.

5.3-1

All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts. Side hill embankments too narrow to accommodate excavation equipment may be placed by end-dumping or side casting until sufficiently wide to support the equipment.

5.4-1

Silt-bearing runoff, as defined by the Contract Administrator, shall not be permitted to go into streams.

5.4-2

Accomplish sediment removal through silt traps, silt fences, settling ponds or other methods to be approved, in writing, by the Contract Administrator.

5.5-5

Finished subgrade shall be crowned as shown on the Typical Section Sheet. Grade and compact to a uniform, firm, rut-free surface to ensure surface runoff in an even and unconcentrated manner.

SECTION 6 - DRAINAGE

6.2.1-1

Purchaser shall furnish, install and maintain corrugated polyethylene and/or aluminized steel Type 2 (ASTM A929, A760, A796, AASHTO M274, M36) pipe as designated on Culvert List. Culvert and flume lengths shall be varied to fit as-built conditions subject to written approval by the Contract Administrator.

6.2.1-1A

Corrugated polyethylene pipe shall have a corrugated exterior and smooth interior, shall meet ASTM F405,F667 and AASHTO M252,M294 Standard Specifications, and shall be manufactured with high density polyethylene resins.

6.2.1-2

Manufacturer's approved connectors shall be used for corrugated polyethylene pipe. Annular corrugated bands and culverts ends shall be used on aluminized steel pipe.

6.2.2.1-1
Culvert, downspout, flume and energy dissipator installation shall be in accordance with Culvert and Drainage Specification Detail.

6.2.2.2-1
Any damaged aluminized coating or cut ends shall be retreated with a minimum of 2 coats of zinc rich paint.

6.2.2.3-1
Cross drains and surface culverts on road grades in excess of 3% shall be skewed at least 30 degrees from perpendicular to the road centerline.

6.2.2.3-2
Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3 percent nor more than 10 percent.

6.2.2.5-1
Drainage structure outfalls shall not terminate directly on unprotected soil that will erode. Downspouts, flumes and energy dissipators shall be installed to prevent erosion.

6.3-1
Ditches shall be constructed prior to application of rock. Ditches shall drain to culverts, ditchouts and natural drainages.

6.3-2
Shaping the ditchline, culvert headwalls and catchbasins shall be completed prior to application of rock and shall be done in accordance with the Typical Section Sheet and Drainage Specification Detail.

6.4-1
Catch basins shall be constructed to resist erosion. Minimum dimensions: two feet wide and four feet long with backslopes consistent with Clause 5.1-8: Excavation Slopes.

6.5-1
Head walls shall be constructed in accordance with Culvert and Drainage Specification Detail at all cross-drain culverts.

6.5-2
Embankment slopes adjacent to culvert inlets and outlets shall be armored for a distance of two culvert diameters on each side of the pipe and one culvert diameter above the pipe in accordance with Culvert List.

SECTION 7 - ROCK

7.1-1
Rock used under this contract may be obtained from commercial sources if approved in writing by the Contract Administrator. The following sources are pre-approved.

Source # / Name	Location
Shine Quarry	Port Ludlow
Penny Creek Quarry	Quilcene

7.1-2
Rock used under this contract may be obtained from the following pit/s on private land. Provisions for the purchase are outlined in the letter/s referenced below:

Source # / Name	Location	Pit Owner	Letter Dated	Rock Type
A/Tarboo Powerline	Sec 12 T28N R02W	Olympic Resource Management	8/18/2004	Ballast

7.1-4

Use of all rock sources are subject to written approval from the Contract Administrator.

7.1-5

Surfacing obtained from commercial sources shall be 3" minus crushed rock.

7.2.1-1

Rock shall meet the following specifications for gradation when placed on the subgrade. No more than 10% of the rock shall be larger than 8 inches in any dimension and no rock shall be larger that 12 inches in any dimension.

7.3-1

The following pit work is required if the Tarboo Powerline Pit is used as a rock source. Work is to be done according to the approved "pit plan" dated June 14, 2004 and as directed by the Contract Administrator.

Source # / Name	Requirements
A/Tarboo Powerline Pit	- Strip approx. 0.4 acres as shown on pit plan. Stripping includes: rock removal area, the horizontal distance necessary to bring the pit faces to a 1 ½ :1 slope, upon completion of rock removals, plus a minimum of 25 feet to the East. - Bring all pit faces to a 1 ½:1 slope upon completion of rock removals.

7.3.5-5

3" Minus Surfacing rock shall meet the following specifications:

3" Minus Crushed Rock:	
% passing 3" square sieve	100%
% passing #4 square sieve	10-35%
% passing U.S. No. 200 sieve	0-10%

7.4.2-1

Apply at least the minimum required rock quantity as shown on the Rock List.

7.4.2-2

Constructed or reconstructed roads shall have the entire subgrade width compacted. Compaction shall be by smooth drum vibratory roller weighing at least 12,000 pounds. Three complete passes at a maximum speed of 3 m.p.h..

7.4.2-2

Subgrade shall be approved, in writing, by the Contract Administrator prior to application of rock.

7.4.2-7

Turnouts and curve widening shall have rock applied to the same depth and specifications as the traveled way.

7.4.2-8

Each lift of rock shall be placed as shown on the Rock List and shall be uniform, firm, rut-free and shaped to ensure surface runoff in an even and unconcentrated manner.

7.4.3-3

Rock shall be spread, shaped and compacted concurrently with rock hauling operations.

7.4.4-1

Riprap shall consist of angular stone placed as indicated in this plan.

1. Loose Rip rap - The stone for loose riprap shall be hard, sound and durable. It shall be free from segregation, seams, cracks and other defects tending to destroy its resistance to weather. Loose rip rap shall be free of rock fines soil or other extraneous material.

   a. Heavy Loose Riprap - Shall meet the following requirements for grading:

At least/Not More Than	Minimum Size	Maximum Size
40% / 90%	1 Ton (1/2 cu.yd.)	--
70% / 90%	300 lbs. (2 cu. ft.)	--
10% / 30%	--	50 lbs.

   b. Light Loose Riprap - Shall meet the following requirements for grading:

At least/Not More Than	Minimum Size	Maximum Size
20% / 90%	300 lbs. to 1 ton	--
80% / --	50 lbs. to 1 ton	--
10% / 20%	--	50 lbs.

7.4.4-2

Riprap shall be set in conjunction with or immediately following construction of the embankment. No placement by end-dumping or dropping of riprap shall be allowed.

SECTION 8 STRUCTURES

8.2

Steel Vehicle Gate/s shall be supplied and installed in accordance with the Vehicle Gate Detail. Each post shall be set in a minimum of 1.5 cu. yard of poured-in-place concrete.

Road	Station
PT-0-4000	MP 0.01

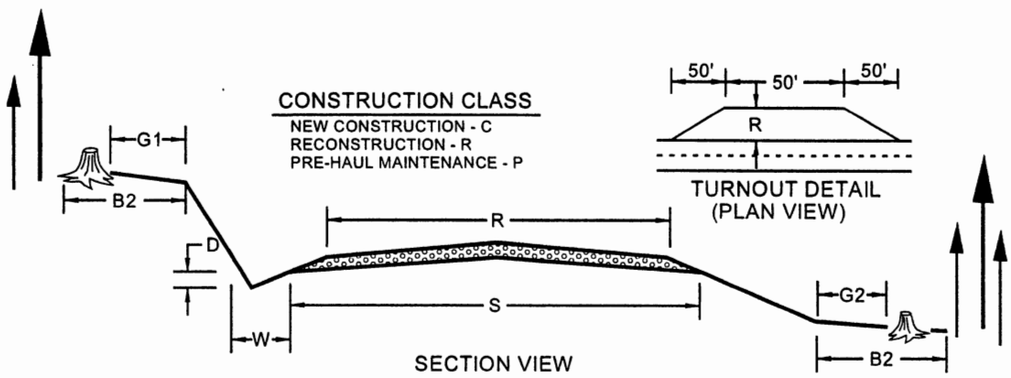
STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME:
East Crocker

ROAD PLAN DATE:
September 8, 2004

TYPICAL SECTION SHEET



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS			ROAD WIDTH (R)	CROWN " AT CL	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (B1)	ROAD FILL CLEARING (B2)	
PT-O-4000	MP 0.0	MP .57	P			12'	4	3'	1'					
PT-O-4100	0+00	12+15	C			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-4200	0+00	6+06	C			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-4300	0+00	1+67	C			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-3000	MP 0.0	MP 1.00	P			12'	4	3'	1'					
PT-O-3030	0+00	2+90	C			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-3040	0+00	0+95	C			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-3100	0+00	22+17	R			12'	4	3'	1'					
PT-O-3110	0+00	3+07	C			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-3130	0+00	3+05	R			12'	4	3'	1'	3'	3'	10'	10'	
PT-O-3130	3+05	12+36	C			12'	4	3'	1'	3'	3'	10'	10'	

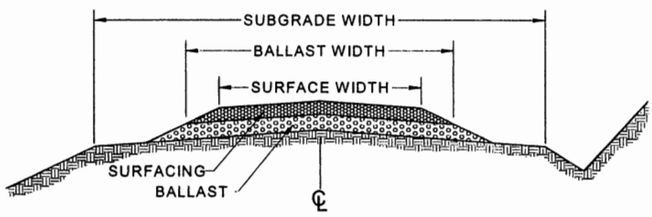
STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME:
East Crocker

ROAD PLAN DATE:
September 8, 2004

ROCK LIST



SECTION VIEW

1. **Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed. All depths are compacted depths.**
2. **Rock slopes shall be 1½ (H) : 1 (V).**
3. **All rock sources are subject to approval by the Contract Administrator.**
4. **Rock source A= Pope Resources Tarboo Powerline Pit**
   Rock source B=3 inch minus surfacing **Rock Source C=Commercial Source**

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	BALLAST SOURCE	BALLAST WIDTH (ft)	BALLAST DEPTH (in)	BALLAST QUANTITY (cu.yd./sta	BALLAST SUBTOTAL (cu.yd)	SURFACE SOURCE	SURFACE WIDTH (ft)	SURFACE DEPTH (in)	SURFACE QUANTITY (cu.yd./sta	SURFACE SUBTOTAL (cu.yd)
PT-O-4000	MP 0.00	MP 0.55							B	12	4	20	581
PT-O-4100	0+00	12+15	15.0	A	12	12	70	851					
PT-O-4200	0+00	6+06	15.0	A	12	12	70	424					
PT-O-4300	0+00	1+67	15.0	A	12	12	70	117					
PT-O-3000	MP 0.01	MP 0.31							B	12	4	20	317
PT-O-3000 spot patch	MP 0.31	MP 0.63							B			5	84
PT-O-3000	MP 0.63	MP 0.83							B	12	4	20	211
PT-O-3030	0+00	2+90	15.0	A	12	12	70	203					
PT-O-3040	0+00	0+95	15.0	A	12	12	70	67					
PT-O-3100	0+00	22+17							B	12	4	20	443
PT-O-3110	0+00	3+07	15.0	A	12	12	70	215					
PT-O-3130	0+00	3+05	17.0	A	14	12	70	214	B	12	6	35	107
PT-O-3130	3+05	5+99	17.0	A	14	12	70	206	B	12	6	35	103
PT-O-3130	5+99	12+36	15.5	A	12	18	110	701					
LANDING								700					
TURNOUTS								265					81
RIP RAP				C				24					
PT-O-3130 select fill	0+00	3+05		A				124					

BALLAST TOTAL = 4111 **SURFACE TOTAL = 1927**

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME:
East Crocker

ROAD PLAN DATE:
September 8, 2004

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	DOWNSPOUT LENGTH (ft)	RIP RAP- INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
PT-O-4000	MP 0.012	18	36						
	MP 0.11	18	26						
	MP 0.19	18	26						
	MP 0.30	18	26						
	MP 0.40	18	26						
	MP 0.57					0.50			clean inlet
	MP 0.445	18	26						
PT-O-4100	0+10	18	50						located in PT-O-4000 ditch
	2+05	18	26						
	3+38	18	26						
	8+52	18	26						
PT-O-4200	4+39	18	26						
PT-O-3000	MP 0.64								clean inlet and outlet
	MP 0.69	18	36				0.5		construct headwall
	MP 0.84								clean inlet and outlet
	MP 0.97								clean inlet and outlet
PT-O-3100	5+52	18	26						
	9+49					0.50			reconstruct headwall and clean
	10+66	18	26						
	15+92			10		0.50	1.50		reconstruct headwall
	21+11	18	26						
PT-O-3110	0+55	18	26						
	2+17	18	26						
PT-O-3130	4+50	18	26						
	6+79	18	26						
	11+05	18	50						

All rip rap shall be 8" – 12" quarry spalls unless specified otherwise.
All backfill shall be native material unless specified otherwise.

Required Minimum Gauge for Metal Pipe

Diameter	Gauge
18"	16
24" - 42"	14
48" - 54"	12
60" - 96"	10

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME: East Crocker

ROAD PLAN DATE: September 8, 2004

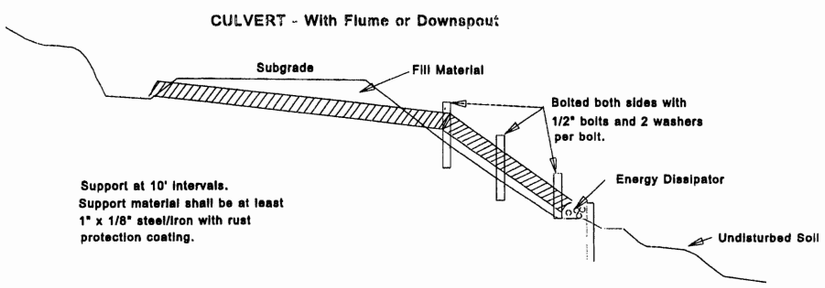
CULVERT AND DRAINAGE SPECIFICATION DETAIL

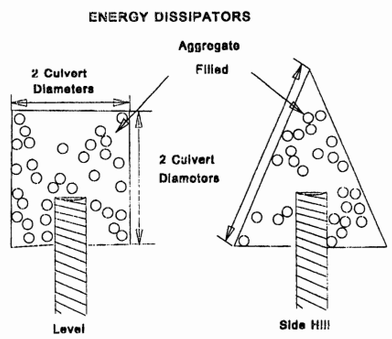
INSTALLATION REQUIREMENTS:

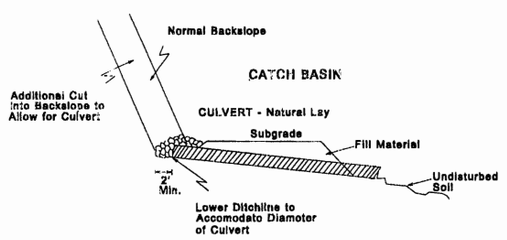
1. Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed so that the pipe is uniformly supported along the barrel.

2. All bedding material of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill. Crushed stone, gravel or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4", whichever is smaller. All material shall be compacted in six inch layers under the haunches, around the sides and above the pipe to the minimum height of cover.

3. Crushed stone and gravel backfill materials shall be compacted to a level of 90-95% AASHTO standard density. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.







DISSIPATOR SPECIFICATIONS:
Depth: 1 culvert diameter
Aggregate: 6" plus

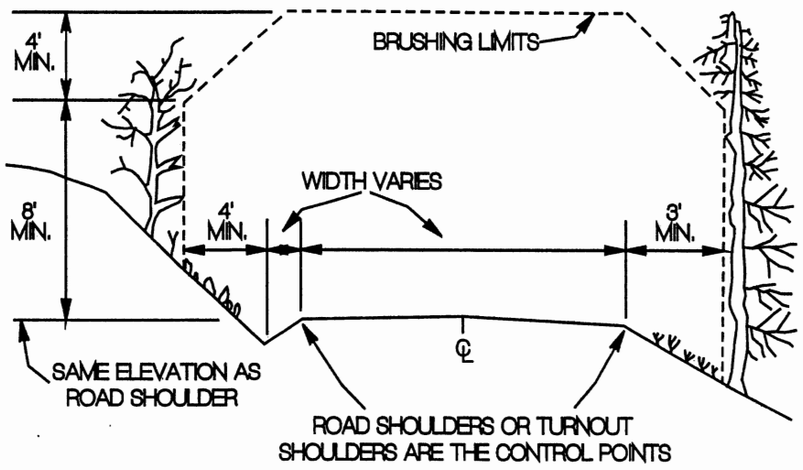
STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

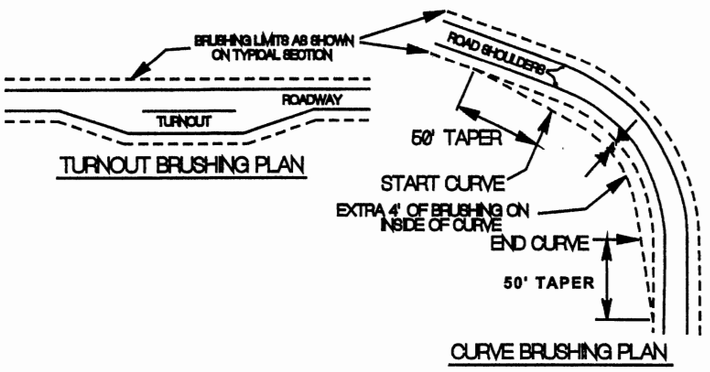
SALE NAME:
East Crocker

ROAD PLAN DATE:
September 8, 2004

BRUSHING DETAIL



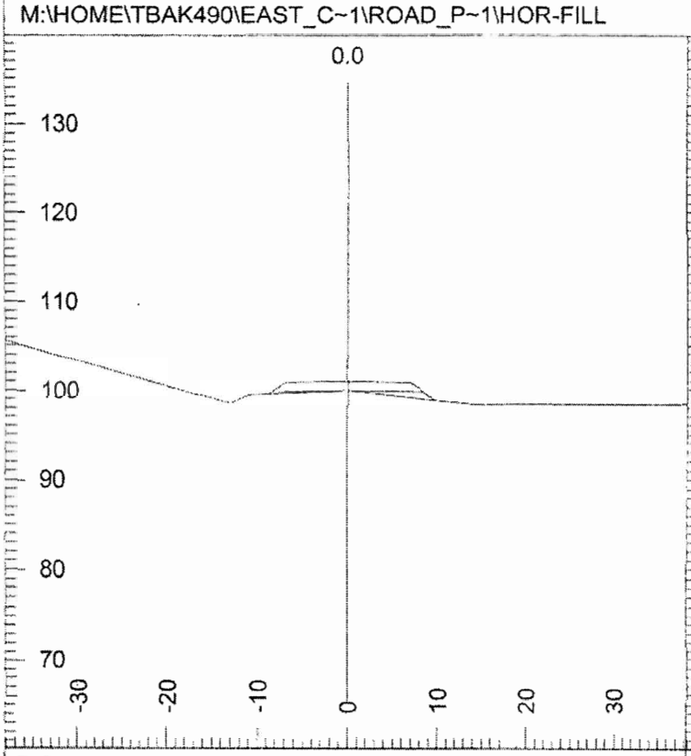
TYPICAL BRUSHING LIMITS SECTION



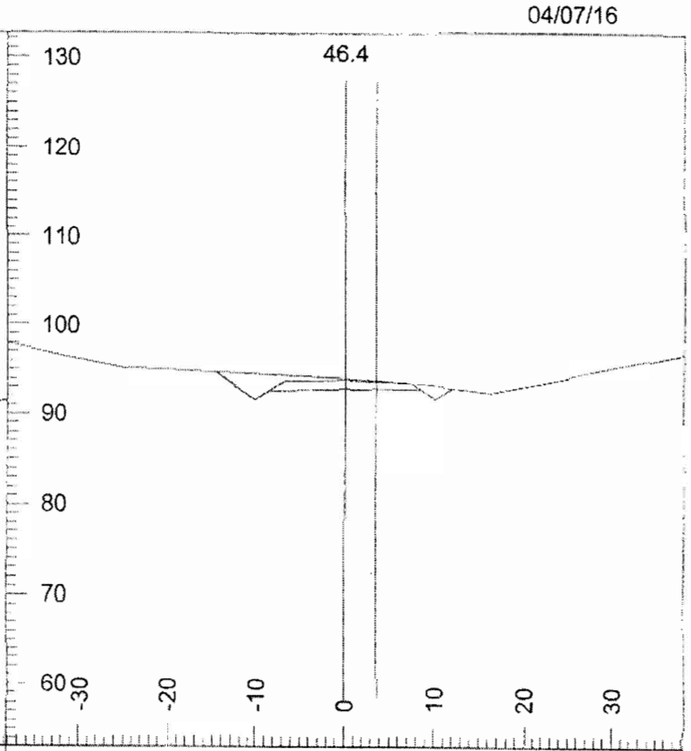
1.) ALL VEGETATION WITHIN THE BRUSHING LIMITS SHALL BE CUT TO WITHIN 8" OF THE GROUND, UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR.
2.) ALL BRUSH, TREES, LIMBS, ETC. SHALL BE REMOVED FROM THE ROAD SURFACE.
3.) ALL BRUSH, TREES, LIMBS, ETC. THAT MAY RESTRICT THE FLOW OF WATER SHALL BE REMOVED FROM THE DITCH LINE.
4.) ALL DEBRIS THAT MAY ROLL OR MIGRATE INTO THE DITCHLINE SHALL BE REMOVED.

ROADENG Section | Scale 1:240 | P. 1

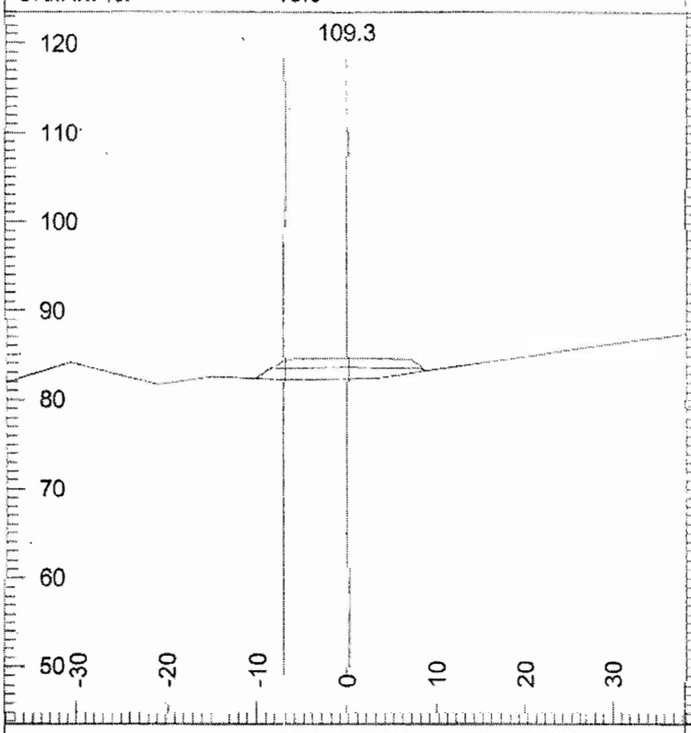
M:\HOME\TBAK490\EAST_C~1\ROAD_P~1\HOR-FILL | 04/07/16



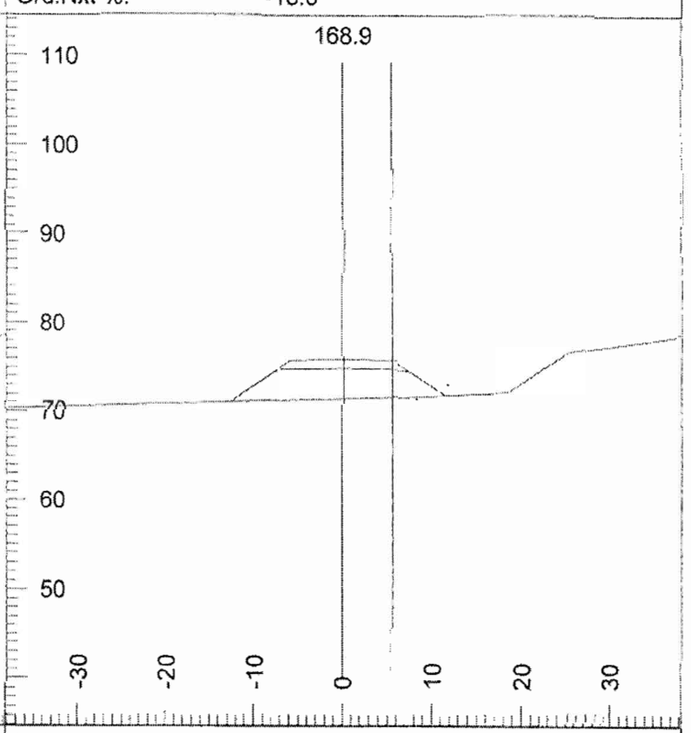
P-Stn:	0.0	Grd.Lst %:	n/a
L-stn:	0.0	Ssl:	-4.0
H. Offset:	0.0	Ssr:	-11.0
Cut Dp:	0.0	Tmpl:	fill
Grd.Nxt %:	-15.0		



P-Stn:	46.4	Grd.Lst %:	-15.0
L-stn:	47.7	Ssl:	4.0
H. Offset:	-3.6	Ssr:	-11.0
Cut Dp:	1.2	Tmpl:	fill
Grd.Nxt %:	-15.0		

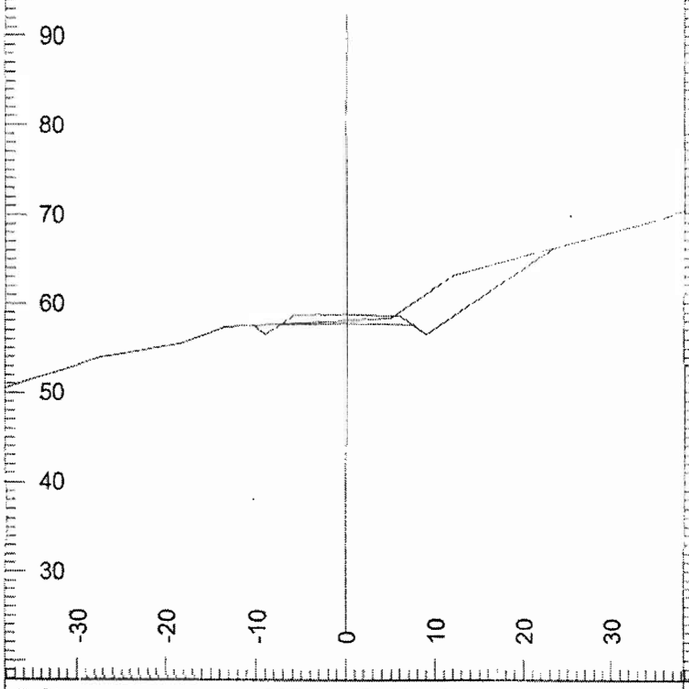


P-Stn:	109.3	Grd.Lst %:	-14.7
L-stn:	110.3	Ssl:	4.0
H. Offset:	7.0	Ssr:	2.0
Cut Dp:	-1.2	Tmpl:	fill
Grd.Nxt %:	-14.7		



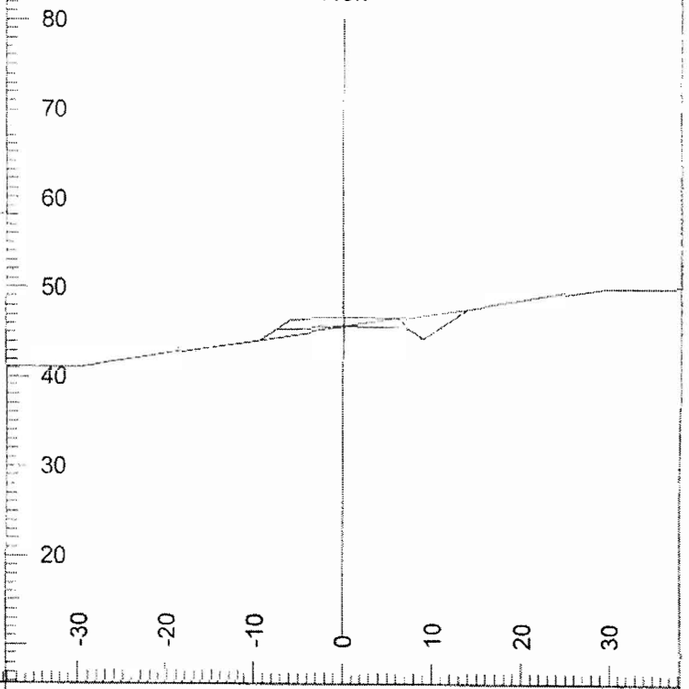
P-Stn:	168.9	Grd.Lst %:	-15.0
L-stn:	169.8	Ssl:	-3.0
H. Offset:	-5.3	Ssr:	5.0
Cut Dp:	-3.3	Tmpl:	stan
Grd.Nxt %:	-15.0		

305.4



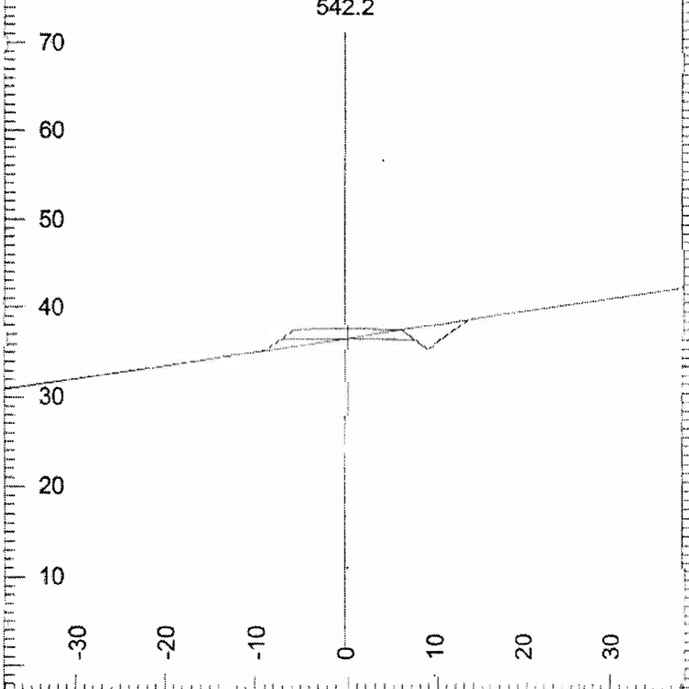
P-Stn:	305.4	Grd.Lst %:	-11.7
L-stn:	307.0	Ssl:	-5.0
H. Offset:	0.0	Ssr:	7.0
Cut Dp:	0.3	Tmpl:	stan
Grd.Nxt %:	-11.7		

440.7



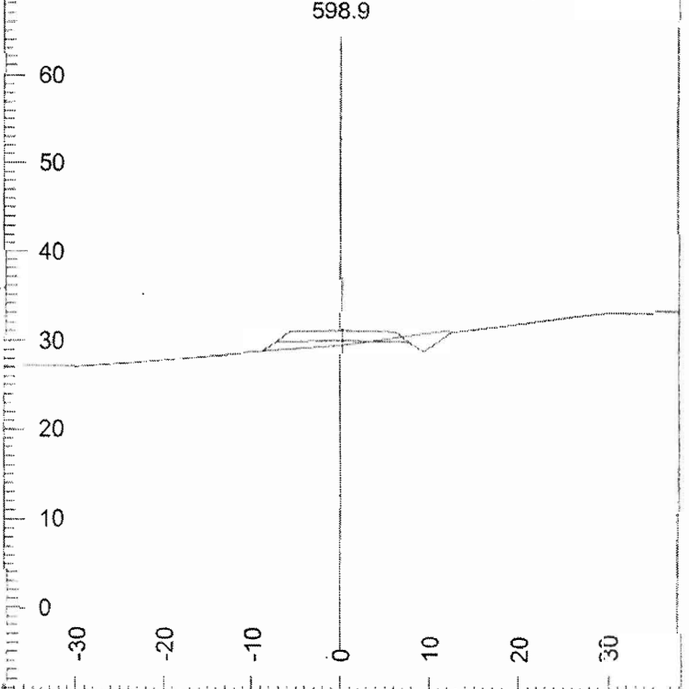
P-Stn:	440.7	Grd.Lst %:	-9.0
L-stn:	442.3	Ssl:	-15.0
H. Offset:	0.0	Ssr:	15.0
Cut Dp:	0.0	Tmpl:	stan
Grd.Nxt %:	-8.9		

542.2



P-Stn:	542.2	Grd.Lst %:	-8.9
L-stn:	543.9	Ssl:	-15.0
H. Offset:	0.0	Ssr:	15.0
Cut Dp:	0.0	Tmpl:	stan
Grd.Nxt %:	-11.7		

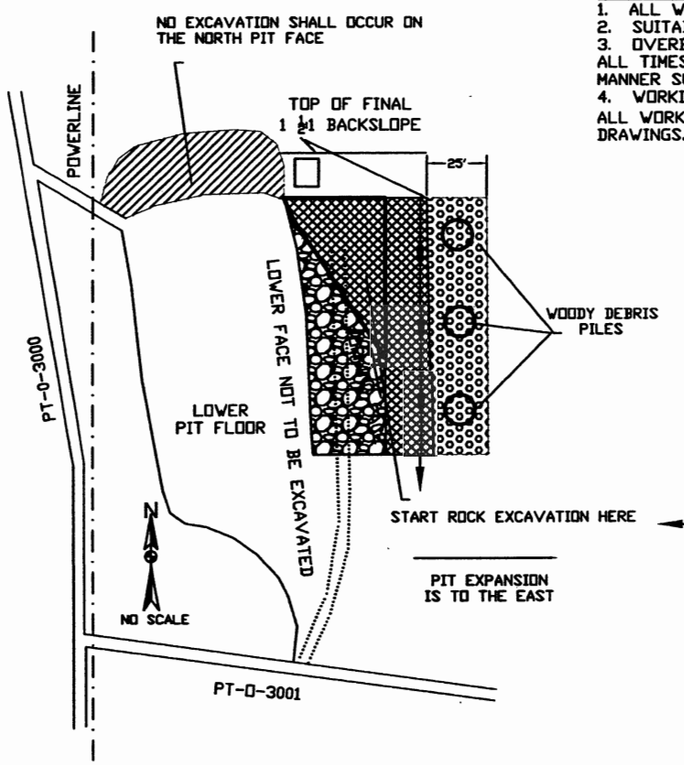
598.9



P-Stn:	598.9	Grd.Lst %:	-11.7
L-stn:	600.6	Ssl:	-8.0
H. Offset:	0.0	Ssr:	13.0
Cut Dp:	-0.5	Tmpl:	stan
Grd.Nxt %:	-11.7		

OLYMPIC RESOURCE MANAGEMENT TARBOO POWERLINE PIT
SECTION 6, T28N R1W W.M.

PIT PLAN



PIT PLAN REVISED 6/14/04

1. ALL WORK SHALL BE COMPLETED AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
2. SUITABLE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
3. OVERBURDEN STRIPPING SHALL BE MAINTAINED AT LEAST 15 FT. FROM THE PIT FACE AT ALL TIMES. WOODY DEBRIS SHALL BE SEGREGATED FROM OVERBURDEN AND PILED IN A MANNER SUITABLE FOR BURNING.
4. WORKING FACE HEIGHT SHALL NOT EXCEED 15 FT. UPON COMPLETION OF ROCK REMOVALS ALL WORKING FACES SHALL BE SLOPED TO A 1 ½1 SLOPE, AS SHOWN ON THE PROFILE DRAWINGS.

UPPER PIT FLOOR

ROCK REMOVAL AREA

AREA TO BE STRIPPED, IN ADDITION TO WHAT IS REQUIRED FOR ROCK REMOVALS.

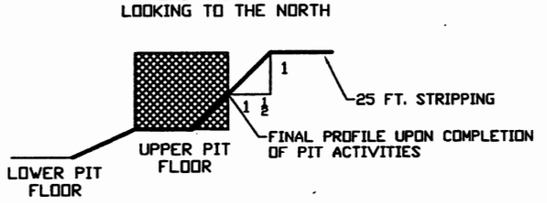
NO EXCAVATION AREA

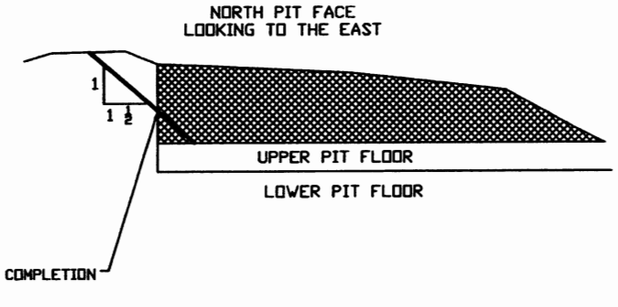
DRAINAGE

ACCESS ROAD

OVERBURDEN WASTE AREAS

PROFILE VIEWS





1.) Gate posts shall be a minimum of 8" diameter steel pipe with a minimum 1/4" wall thickness.

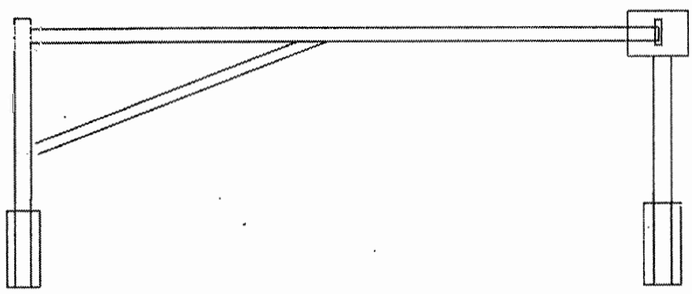
2.) Gate beam shall be a minimum of 3" diameter steel pipe with a minimum 1/4" wall thickness.

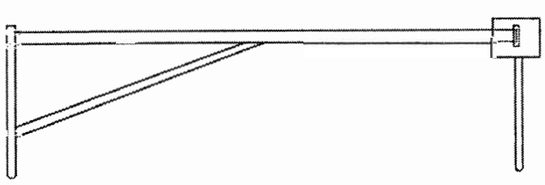
3.) Gate posts shall extend a minimum of 5' into the ground and each post shall be set in a minimum 1 1/2 cubic yards of concrete. Posts shall be filled with concrete and four pieces of 1/2" rebar rebar shall run the full length of the gate posts.

4.) All metal surfaces, including welds, shall be painted with at least two coats of single component, moisture-curing, aliphatic polyurethane. (A preapproved paint system is manufactured by: Wasser High-Tech Coatings INC.)

5.) Gate post shall be equipped with an enclosed, lock bell.

6.) Trenches shall be constructed if necessary to prevent vehicles from driving around gate.





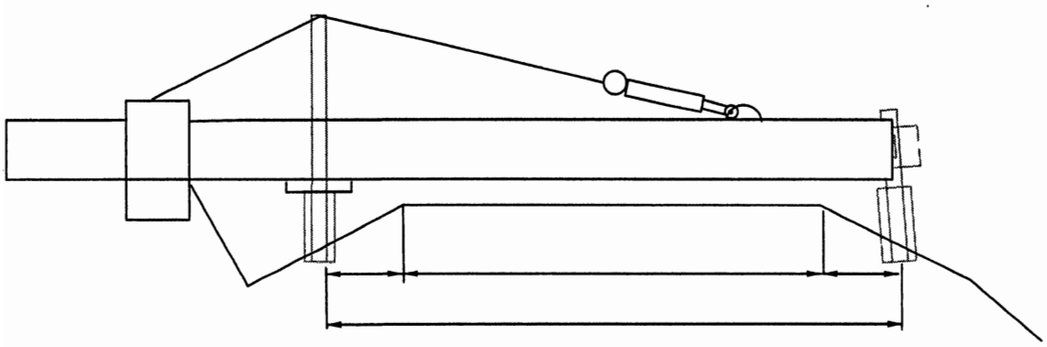
1.) Dig out tipping gate post.

2.) Reset gate post and shall be set in a minimum
1 1/2 cubic yards of concrete.

3.) Readjust and align gate so arm swings freely in and out of lockbell.

4.) All metal surfaces, including welds, shall be repainted with at least two coats of single component, moisture-curing, aliphatic polyurethane. (A preapproved paint system is manufactured by: Wasser High-Tech Coatings INC.)

5.) Lubricate pivot point



Readjust and align gate so arm swings freely in and out of lockbell.